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AMENDMENTS TO THE CLAIMS

Please add or amend the claims to read as follows, and cancel without prejudice or disclaimer to resubmission in a divisional or continuation application claims indicated as cancelled:

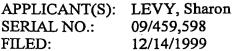
1. (Currently amended) A method comprising:

recursively calculating state metric vectors from a block of symbols and storing at a first storage area a reference vectors corresponding to a selected group of the calculated state metric vectors of a state metric comprising a plurality of vectors calculated, in a predetermined direction, from a block of symbols; and

re-calculating at least some of the state metric vectors based on the stored reference vectors and storing at a second storage area the at least some re-calculated state metric vectors.

- 2. (Canceled)
- 3. (Canceled)
- 4. (Previously presented) A method according to claim 1, wherein re-calculating at least some of the state metric vectors comprises calculating state metric vectors which were not stored as reference vectors.
- (Currently amended) A method according to claim 31, wherein storing two or more 5. reference vectors at the first storage area comprises storing a number of reference vectors which is equal to about the square root of the number of the calculated state metric vectors.
- 6. (Currently amended) A method according to claim 31, wherein storing two or more reference vectors at the first storage area comprises storing vectors selected in responseive to locations of singular functions used in the calculating of the calculated state metric vectors.



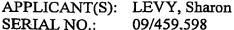


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- 7. (Currently amended) A method according to claim 31, wherein storing two or more reference vectors at the first storage area comprises storing vectors selected in predetermined intervals.
- 8. (Currently amended) A method according to claim 7, wherein storing two or more reference vectors selected in predetermined intervals comprises storing reference vectors with equal intervals between them.
- 9. (Currently amended) A method according to claim 7, wherein storing two-or more reference vectors selected in predetermined intervals comprises storing reference vectors with intervals of decreasing size between them.
- Canceled.
- 11. (Currently amended) A method according to claim 1, wherein re-calculating at least some of the state metric vectors comprises <u>re-calculating</u> at least some of the state metric vectors using a reverse function of a function used in the <u>recursively</u> calculating <u>the state</u> <u>metric vectors from the block of symbols the reference vector of the state metric.</u>
- 12. Canceled.
- 13. Canceled.
- 14. Canceled
- 15. (Currently amended) A method according to claim 1, wherein re-calculating at least some of the state metric vectors comprises re-calculating at least some of the vectors using a function which was used in recursively calculating the state metric vectors from the block of symbols the calculation of the reference vector of the state metric.
- 16. (Previously amended) A method according to claim 1, further comprising: wherein recursively calculating the state metric vectors comprises calculating the state metric vectors





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by using a function which is an approximation of an original function; and wherein re-calculating at least some of the state metric vectors comprises re-calculating the at least some of the state metric vectors by using a reverse function of the original function.

- 17. (Currently amended) A method according to claim 1, wherein storing the reference vector further recursively calculating the state metric vectors comprises calculating the state metric vectors from the block of symbols in the predetermined direction by using a function which is an approximation of an original function when the original function is non-reversible.
- (Currently amended) A method according to claim 17, wherein recursively calculating the state metric vectors from the block of symbols in the predetermined direction comprises forward calculating of the state metric vectors.
- (Currently amended) A method according to claim 17, wherein recursively calculating 19. the state metric vectors from the block of symbols in the predetermined-direction comprises backward calculating of state metric vectors.
- 20. Canceled.
- 21. (Currently amended) A method according to claim 16, wherein recursively calculating the state metric vectors comprises calculating a number of vectors substantially equal to a size of an encoding block.
- 22. (Currently amended) A method according to claim 16, wherein calculating the state metric vectors comprises calculating a number of vectors substantially smaller than a size of an encoding block.
- 23. (Currently amended) A method comprising:



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calculating a plurality of state metric vectors from a block of symbols in a first direction;

storing a reference vector vectors selected from of the calculated state metric vectors; and

re-calculating the state metric vectors from a the block of symbols in a second direction based on the stored reference vector vectors.

- 24. (Currently amended) A method according to claim 23, further comprising re-calculating a first state metric vector from the block of symbols in the first direction after re-calculating a second state metric vector from the block of symbols in the second direction.
- 25. Canceled.
- 26. (Currently amended) A method according to claim 23, wherein storing the reference vectors vector comprises storing two or more reference vectors calculated in predetermined intervals.
- 27. (Currently amended) A method according to claim 24, wherein re-calculating the first state metric vector comprises re-calculating the first state metric vector based on a closest stored reference vector.
- 28. Canceled.
- 29. (Currently amended) A method according to claim 23, further comprising: storing two or more reference vectors;

dividing the block of symbols into a two or more segments defined by the respective stored reference vectors; and

re-calculating the first state metric vector for the two or more segments based on a the respective stored reference vector vectors of the segment.





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- 30. (Previously amended) A method according to claim 29, wherein re-calculating for the two or more segments comprises re-calculating state metrics for some of the two or more segments.
- 31. (Previously amended) A method according to claim 29, comprising storing a re-calculated reference vector of the re-calculated state metric.
- 32. Canceled.
- 33. (Currently amended) A method according to claim 31, comprising storing the vectors of the re-calculated state metrics of the a segment of the two or more segments.
- 34-42 Canceled.

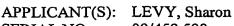
43. (Currently amended) A An apparatus decoder comprising:

eireuitry a backward calculation unit to calculate state metric vectors from a block of symbols in a predetermined direction; and

a memory having a long-term first storage area to store a reference vector of the calculated state metric vectors and a short term second storage area to store at least some of the re-calculated state metric vectors which are re-calculated from the block of symbols in the predetermined direction based on the stored reference vector.

- 44. (Currently amended) The apparatus decoder of claim 43 44, wherein a maximal storage space of the memory is eapable able to store less than fifty percent of a predetermined number of state metric vectors.
- 45. (Currently amended) The apparatus decoder of claim 44 43, wherein the maximal storage space of the memory is eapable able to store less than twenty percent of the predetermined number of state metric vectors.





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- 46. (Currently amended) The apparatus decoder of claim 43, wherein the backward calculation unit eircuitry implements a plurality of different functions for calculating the state metric vectors.
- 47. (Currently amended) The apparatus decoder of to claim 46, wherein the backward calculation unit circuitry implements a pair of functions for calculating the state metric vectors which and wherein the pair comprise mutual reverse functions.
- 48. (Currently amended) The apparatus decoder of claim 43, wherein the long term first storage area is used to store two or more reference vectors in predetermined intervals and the short-term second storage area is used to store the calculated state metric vectors between two reference vectors.
- 49. (Currently amended) The apparatus decoder of claim 48, wherein the long term first storage area serves also for storing state metric vectors from between two reference vectors.

